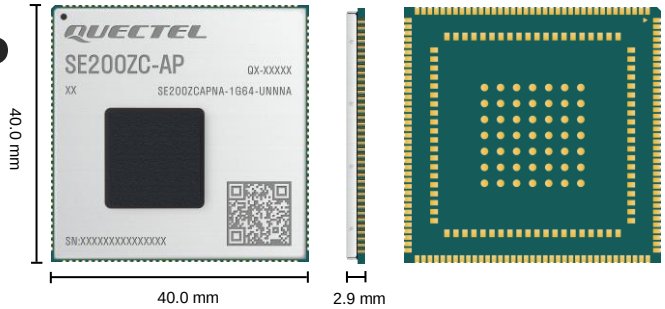
Quectel SE200ZC-AP

Smart Module



SE200ZC-AP is a new generation smart module launched by Quectel. It integrates the Rockchip IoT chip RV1126B / RV1126BJ, featuring a high-performance quad-core ARM Cortex-A53 CPU (integrated with NEON and FPU), a 12 M ISP HDR, an 8 M AI-ISP, and a 3 TOPS NPU (supporting mixed operations of INT4/8/16 and FP16). The module also supports external Wi-Fi and Bluetooth connectivity. With powerful performance and built-in “sensing – computing – communication” capabilities, it is well-suited to meet customer demands in the field of smart security.

The SE200ZC-AP module integrates a rich set of peripheral interfaces: 1 × MIPI_DPHY/ DVP/ LCDC, 2 × MIPI CSI, 3 × SAI, 1 × PDM, 2 × DSM, 22 × ADC, 6 × I2C, 1 × GMAC, 1 × USB 3.0, 1 × USB 2.0, 2 × SPI, 2 × CAN FD, 2 × SDIO, 8 × UART, etc. The module supports 4K @ 30 fps video decoding (H.265/ H.264) and 4K @ 45 fps video encoding (H.265/ H.264), as well as multi-stream encoding. Coupled with a 3 T NPU and a comprehensive suite of deep learning algorithms, it enables the realization of “sensing – computing – communication” application requirements. Additionally, the module comes preloaded with a Linux*/ Debian* system and supports external Quectel Cat 4/ 1, 4G, Voice, Wi-Fi 6, and GNSS modules. This significantly expands its applicability in the M2M (Machine-to-Machine) field, making it widely suitable for industries such as smart security, smart industry, intelligent vehicles, robotic vision, and smart home.

Key Features

- Quad-core ARM Cortex-A53 CPU with NEON and FPU
- 12 M ISP HDR & 8 M AI-ISP
- NPU up to 3 TOPS (supports mixed operation of INT4/8/16/FP16)
- Decode 4K @ 30 fps (H.265/ H.264)
- Encode 4K @ 45 fps (H.265/ H.264)
- Gigabit Ethernet port

Quad-core ARM Cortex-A53 CPU

3 TOPS NPU

Linux*/ Debian*

LCC + LGA Package

Powerful Multimedia Function

Gigabit Ethernet Port

Version: 1.0.0 | Status: Preliminary

Quectel SE200ZC-AP

	SE200ZC-AP	
Grade	**Commercial-grade***	**Industrial-grade***
Platform	RV1126B*	RV1126BJ*
CPU	4 × A53 @ 1.6 GHz	4 × A53 @ 1.3 GHz
NPU	3 TOPS @ INT4/INT8/INT16/FP16 mixed operation	
ISP	Max. 12M @ 30fps	
AI-ISP	Max. 8M @ 30fps, up to 4096 × 4096	
Memory	• 1 GB LPDDR4x + 64 GB eMMC (default) • 2 GB LPDDR4x + 64 GB eMMC (default) • 4 GB LPDDR4x + 64 GB eMMC (optional)	• 1 GB LPDDR4x + 64 GB eMMC (default) • 2 GB LPDDR4x + 64 GB eMMC (default) • 4 GB LPDDR4x + 64 GB eMMC (optional)
Temperature Range		
Operating Temperature	-25 °C ~ +75 °C	-35 °C ~ +80 °C
Electrical Features		
Power Consumption (Typ.)	TBD	TBD
Certifications		
Regulatory/ Conformance	CE*/ RCM*	CE*/ RCM*
	General Features	
Region/ Operator	Global	
OS	Linux (Kernel 6.1*)/ Debian*	
Dimensions (mm)	40.0 × 40.0 × 2.9	
Package	LCC + LGA	
Weight (g)	TBD	
Interfaces		
Display	• 1 × MIPI_DPHY_TX (supports v1.2 version, 4 lane total, supports 1920 × 1080@60fps) • 1 × LCDC* (multiplexed from other signal pins): ➢ Supports parallel 24 bit RGB mode 1920 × 1080@60fps ➢ 16 bit BT1120 mode 1920 × 1080@60fps ➢ 8 bit BT656 mode 720 × 576@60fps	
Camera	• 2 × 4-lane MIPI CSI D-PHY v1.2, Max. 2.5 Gbps/ lane, which can be divided into 2 × 2-lane + 2 × 2-lane • 1 × DVP (8/10/12/16-bit，BT.601/BT.656 and BT.1120) • Max resolution per camera: 12 MP @ 30fps • Up to 5 cameras	
Audio	3 × SAI，1 × PDM，2 × DSM，2 × MIC	
Video	**Video encoding:** 4K @ 45 fps H.265/ H.264 **Video decoding:** 4K @ 30 fps H.265/ H.264	
USB	× 1 USB 3.0 (OTG) × 1 USB 2.0 (Host supports high-speed/ full-speed/ low-speed)	
RGMII	× 1 GMAC (supports Gigabit Ethernet or built-in Fast Ethernet PHY; they cannot be used simultaneously)	
UART	Max. × 8 ①	
PDM	Max. × 1	
DSM	Max. × 2 ①	
SDIO	Max. × 2	
I2C	Max. × 6 ①	
SAI	Max. × 3 ①	
ADC	× 22 ①, general-purpose ADC interfaces	
SPI	Max. × 2 ①	
PWM	Max. × 28 ①	
CAN	Max. × 2 ①; CAN FD	
Keypad	PWRKEY/ RESET_N	
GPIO	Max. × 115 ①	
Electrical Features		
Supply Voltage Range	4.5-5.5 V, typ. 5 V	

Note:

*: Under development

①: Includes multiplexed interfaces

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